In the Claims

1-18 (canceled).

19 (New). A method of identifying a candidate molecule for the treatment of a CNS disorder, said method comprising:

(a) contacting a D-amino acid oxidase (DAO) or D-aspartate oxidase (DDO) polypeptide or a biologically active fragment thereof with a test compound; and

(b) determining whether said compound

(i) binds to said polypeptide; or

(ii) reduces the activity of said polypeptide; and

(c) if said compound binds to said polypeptide reduces the activity of said polypeptide, administering said compound to an animal model of schizophrenia, depression or bipolar disorder, wherein a determination that said compound ameliorates a characteristic representative of CNS disorder in said animal model indicates that said compound is a candidate molecule for the treatment of a CNS disorder.

20 (New). A method of identifying a candidate molecule for the treatment of schizophrenia, depression or bipolar disorder, said method comprising:

(a) contacting a DAO or DDO polypeptide or a biologically active fragment thereof with a test compound; and

(b) determining whether said compound

(i) selectively reduces the activity of said polypeptide; or

(ii) selectively binds said polypeptide;

wherein a test compound that selectively reduces the activity of or selectively binds to said polypeptide is identified as a candidate molecule for the treatment of schizophrenia, depression or bipolar disorder.

21 (New). A method of screening for antagonists of a DAO or a DDO polypeptide, comprising the steps of:

(a) contacting a test compound with a DAO or DDO polypeptide selected from the group consisting of;

(i) a polypeptide comprising a polypeptide encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 2 to 6, 19 and 20;

(ii) a polypeptide comprising a polypeptide sequence selected from the group consisting of SEQ ID NOS: 7 to 10, 21 and 22;

(b) detecting the level of DAO activity; and

(c) comparing the activity to the activity of a control test without the test compound, whereby a decrease in the level of the DAO or DDO activity over the control indicates that the test compound is an antagonist of DAO or DDO.

22 (New). A method of screening for compounds that reduce the expression of the DAO or DDO mRNA or polypeptide, comprising the steps of:

(a) incubating cells expressing a DAO or a DDO polypeptide selected from the group consisting of:

(i) a polypeptide comprising a polypeptide encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 2 to 6, 19 and 20;

(ii) a polypeptide comprising a polypeptide sequence selected from the group consisting of SEQ ID NOS: 7 to 10, 21 and 22;

(I) in the presence and (II) in the absence of a test compound; and

(b) detecting the level of the DAO or DDO mRNA or polypeptide in the cells.

23 (New). A method of assessing a candidate molecule for the treatment of a CNS disorder, said method comprising:

(a) providing a test DAO-inhibitor or DDO-inhibitor compound; and

(b) administering said compound to an animal model of schizophrenia or bipolar disorder,

wherein a determination that said compound ameliorates a characteristic representative of a CNS disorder in said animal model indicates that said compound is a candidate molecule for the treatment of a CNS disorder; and alternatively one or more of the following:

(i) wherein said compound selectively binds to said polypeptide;

(ii) wherein said compound selectively reduces the activity of said polypeptide;

(iii) wherein said compound reduces the oxidation or degradation of a D-amino acid selected from the group consisting of D-Met, D-Pro, D-Phe, D-Tyr, D-Ile, D-Leu, D-Ala, D-Val, D-Ser, D-Arg, D-His, D-norleucine, D-Trp, D-Ornithine, cis-4-hydroxy-D-proline, D-Thr, D-Trp-methyl ester, N-acetyl-D-Ala, D-Lys, D-Asp, D-Glu, D-Asn, D-Gln, D-Asp-dimethyl-ester and N-methyl-D-Asp.

24 (New). A method of treating an individual suffering from schizophrenia, depression or bipolar disorder comprising administering to said individual a therapeutically effective amount of a composition comprising a compound that reduces the conversion of a D-amino acid into the corresponding α-keto acid, wherein the compound can be identified according to the methods of claims 19-23.

25 (New). The method according to claim 24, wherein said compound reduces the activity of a DAO or DDO polypeptide.

26 (New). The method according to claim 24, wherein said compound is capable of reducing the oxidation or degradation of D-serine.

27 (New). The method according to claim 24, wherein the compound is selected from the group consisting of:

i. 2-oxo-3pentynoate;

ii. aminoguanidine or salts thereof;

iii. benzoic acid;

iv. sodium benzoate;

v. 2-aminobenzoate;

vi. 3-aminobenzoate;

vii. 4-aminobenzoate;

viii. methylglyoxal bis(guanylhydrazone);

ix. methylglyoxal bis(guanylhydrazone) dihydrochloride;

x. phenylglyoxal bis(guanylhydrazone) (PhGBG);

xi. glyoxal bis(guanylhydrazone);

xiii. 3-indole-acetic acid;

xiv. indole-3-acetic acid;

xv. indole-3-acetone;

xvi. indole-3-acetamide;

xvii. indole-3-acetyl-L-aspartic acid;

xviii. indole-3-acetyl-L-alanine;

xix. indole-3-acetylglycine;

xx. indole-3-acetaldehyde sodium bisulfite;

xxi. indole-3-carboxylic acid;

xxii. indole-3-pyruvic acid;

xxiii. salicylic acid;

xxiv. salicylic acid sodium salts;

xxv. salicylic acid potassium salts;

xxvi. dansyl chloride;

xxvii. dansyl fluoride;

xxviii. dansyl glycine;

xxix. alanine tetrazole;

xxx. benzoic tetrazole;

xxxi. tetrazole;

xxxii. riboflavin 5'-pyrophosphate;

xxxiii. D, L-propargylglycine;

xxxiv. L-C-propargylglycine;

xxxv. N-acetyl-DL-proparglyglycine;

xxxvi. (±)-sodium 3-hydroxybutyrate;

xxxvii. trigonelline hydrochloride;

xxxviii. N-methylnicotinate;

xxxix. methyl 6-methylnicotinate;

xl. ethyl 2-methylnicotinate;

xli. kojic acid;

xlii. 6-(pyrrolidinomethyl)-kojic acid hydrochloride, 6-(morpholinomethyl)-kojic acid, 6-(diethylaminomethyl)-kojic acid hydrochloride;

xliii. O-(2,4-dinitrophenyl)hydroxylamine;

xliv. 2,4-dinirophenyl glycine;

xlv. hydroxylamine hydrochloride;

xlvi. methyl-p-nitrobenzenesulfonate;

xlvii. aminoethylcysteine-ketimine;

xlviii. 1,4-thiazine derivatives;

xlix. 4-phenyl-1,4-sulfonazan;

l. phenothiazine;

li. 3,4-dihydro-2H-1,4-thiazine-3,5-dicarboxylic acid;

lii. nifurtimox;

liii. 3-(1-pyrrolidinylmethy)-4-(5,6-dichloro-1-indancarbonyl)-tetrahydro-1,4-thiazine hydrochloride;

liv. ketimine reduced forms;

lv. cystathionine;

lvi. cystathionine ketimine;

lvii. lanthionine ketimine;

lviii. thiomorpholine-2-carboxylic acid;

lix. thiomorpholine-2,6-dicarboxylic acid;

lx. TMDA (1,4-thiomorpholine-3,5-dicarboxylic acid);

lxi. 1-chloro-1-nitroethane;

lxii. anthranilate;

lxiii. ethyl 2-aminobenzoate;

lxiv. methyl 2-aminobenzoate;

lxv. picolinate;

lxvi. ethyl picolinate;

lxvii. L-leucine methyl ester hydrochloride;

lxviii. L-leucine;

lxix. flurodinitrobenzene;

lxx. dinitrochlorobenzene;

lxxi. 1,2-cyclohexanedione;

lxxii. allyglycine;

lxxiii. 2-amino-2,4-pentadienoate;

lxxiv. 2-hydroxy-2,4-pentadienoate;

lxxv. 2-amino-4-keto-2-pentenoate;

lxxvi. 2-hydroxybutyrate;

lxxvii. sodium 2-hydroxybutyrate;

lxxviii. N-chloro-D-leucine;

lxxix. N-acetyl-D-leucine;

lxxx. D-2-amino-4-methylpentanoic acid;

lxxxi. D, L-propargylglycine;

lxxxii. progesterone;

lxxxiii. FAD (flavin adenine dinucleotide);

lxxxiv. 6-OH-FAD;

lxxxv. phenylglyoxal;

lxxxvi. phenylglyoxal monohydrate;

lxxxvii. cyclothionine;

lxxxviii. alpha-alpha'-iminodipropionic;

lxxxix. meso-diaminosuccinic acid;

xc. thiosemicarbazide;

xci. thiourea;

xcii. methylthiouracil;

xciii. sulphathiazole;

xciv. sulfathiazole Salt;

xcv. thiocyanate;

xcvi. 3-methylbenzyl thiocyanate;

xcvii. methimazole;

xcviii. dicarboxylic hydroxyacids;

xcix. 1,3-acetonedicarboxylic acid;

c. D-tartaric acid;

ci. L-tartaric acid;

cii. D, L-tartaric acid;

ciii. potassium tartarate;

civ. D-malic acid;

cv. L-malic acid;

cvi. D, L-malic acid;

cvii. alpha-keto acids that are analogues of the amino acids alanine, leucine, phenylanaline, phenylglycine, tyrosine, serine, aspartate, and salts thereof;

cviii. pyruvic acid;

cix. sodium pyruvate;

cx. pyruvic acid methyl ester;

cxi. phenylpyruvic acid;

cxii. calcium phenylpyruvate;

cxiii. phenylpyruvic acid sodium salt;

cxiv. 4-hydroxyphenyl pyruvic acid;

cxv. sodium alpha-ketoisovaleric acid;

cxvi. benzoylformic acid);

cxvii. 4-methylthio-2-oxopentanoic acid;

cxviii. 4-methyl-2-oxopentanoic acid;

cxix. 4-methylthio-2-oxybutanoic acid;

cxx. 2-oxybutanoic acid;

cxxi. D, L-alpha-hydroxybutyric acid sodium salt;

cxxii. indole-3-pyruvic acid;

cxxiii. cysteamine;

cxxiv. pantetheine;

cxxv. S-adenosylmethionine;

cxxvi. ethyl bromopyruvate;

cxxvii. methyl bromopyruvate;

cxxviii. bromopyruvate; and

cxxix. 5-S-cysteinyldopamine.

28 (New). The method according to claim 25, wherein the compound is selected from the group consisting of:

i. 2-oxo-3pentynoate;

ii. aminoguanidine or salts thereof;

iii. benzoic acid;

iv. sodium benzoate;

v. 2-aminobenzoate;

vi. 3-aminobenzoate;

vii. 4-aminobenzoate;

viii. methylglyoxal bis(guanylhydrazone);

ix. methylglyoxal bis(guanylhydrazone) dihydrochloride;

x. phenylglyoxal bis(guanylhydrazone) (PhGBG);

xi. glyoxal bis(guanylhydrazone);

xiii. 3-indole-acetic acid;

xiv. indole-3-acetic acid;

xv. indole-3-acetone;

xvi. indole-3-acetamide;

xvii. indole-3-acetyl-L-aspartic acid;

xviii. indole-3-acetyl-L-alanine;

xix. indole-3-acetylglycine;

xx. indole-3-acetaldehyde sodium bisulfite;

xxi. indole-3-carboxylic acid;

xxii. indole-3-pyruvic acid;

xxiii. salicylic acid;

xxiv. salicylic acid sodium salts;

xxv. salicylic acid potassium salts;

xxvi. dansyl chloride;

xxvii. dansyl fluoride;

xxviii. dansyl glycine;

xxix. alanine tetrazole;

xxx. benzoic tetrazole;

xxxi. tetrazole;

xxxii. riboflavin 5'-pyrophosphate;

xxxiii. D, L-propargylglycine;

xxxiv. L-C-propargylglycine;

xxxv. N-acetyl-DL-proparglyglycine;

xxxvi. (±)-sodium 3-hydroxybutyrate;

xxxvii. trigonelline hydrochloride;

xxxviii. N-methylnicotinate;

xxxix. methyl 6-methylnicotinate;

xl. ethyl 2-methylnicotinate;

xli. kojic acid;

xlii. 6-(pyrrolidinomethyl)-kojic acid hydrochloride, 6-(morpholinomethyl)-kojic acid, 6-(diethylaminomethyl)-kojic acid hydrochloride;

xliii. O-(2,4-dinitrophenyl)hydroxylamine;

xliv. 2,4-dinirophenyl glycine;

xlv. hydroxylamine hydrochloride;

xlvi. methyl-p-nitrobenzenesulfonate;

xlvii. aminoethylcysteine-ketimine;

xlviii. 1,4-thiazine derivatives;

xlix. 4-phenyl-1,4-sulfonazan;

l. phenothiazine;

li. 3,4-dihydro-2H-1,4-thiazine-3,5-dicarboxylic acid;

lii. nifurtimox;

liii. 3-(1-pyrrolidinylmethy)-4-(5,6-dichloro-1-indancarbonyl)-tetrahydro-1,4-thiazine hydrochloride;

liv. ketimine reduced forms;

lv. cystathionine;

lvi. cystathionine ketimine;

lix. lanthionine ketimine;

lx. thiomorpholine-2-carboxylic acid;

lix. thiomorpholine-2,6-dicarboxylic acid;

lx. TMDA (1,4-thiomorpholine-3,5-dicarboxylic acid);

lxi. 1-chloro-1-nitroethane;

lxii. anthranilate;

lxiii. ethyl 2-aminobenzoate;

lxiv. methyl 2-aminobenzoate;

lxv. picolinate;

lxvi. ethyl picolinate;

lxvii. L-leucine methyl ester hydrochloride;

lxviii. L-leucine;

lxix. flurodinitrobenzene;

lxx. dinitrochlorobenzene;

lxxi. 1,2-cyclohexanedione;

lxxii. allylglycine;

lxxiii. 2-amino-2,4-pentadienoate;

lxxiv. 2-hydroxy-2,4-pentadienoate;

lxxv. 2-amino-4-keto-2-pentenoate;

lxxvi. 2-hydroxybutyrate;

lxxvii. sodium 2-hydroxybutyrate;

lxxviii. N-chloro-D-leucine;

lxxix. N-acetyl-D-leucine;

lxxx. D-2-amino-4-methylpentanoic acid;

lxxxi. D, L-propargylglycine;

lxxxii. progesterone;

lxxxiii. FAD (flavin adenine dinucleotide);

lxxxiv. 6-OH-FAD;

lxxxv. phenylglyoxal;

lxxxvi. phenylglyoxal monohydrate;

lxxxvii. cyclothionine;

lxxxviii. alpha-alpha'-iminodipropionic;

lxxxix. meso-diaminosuccinic acid;

xc. thiosemicarbazide;

xci. thiourea;

xcii. methylthiouracil;

xciii. sulphathiazole;

xciv. sulfathiazole Salt;

xcv. thiocyanate;

xcvi. 3-methylbenzyl thiocyanate;

xcvii. methimazole;

xcviii. dicarboxylic hydroxyacids;

xcix. 1,3-acetonedicarboxylic acid;

c. D-tartaric acid;

ci. L-tartaric acid;

cii. D, L-tartaric acid;

ciii. potassium tartarate;

civ. D-malic acid;

cv. L-malic acid;

cvi. D, L-malic acid;

cvii. alpha-keto acids that are analogues of the amino acids alanine, leucine, phenylanaline, phenylglycine, tyrosine, serine, aspartate, and salts thereof;

cviii. pyruvic acid;

cix. sodium pyruvate;

cx. pyruvic acid methyl ester;

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cxii. calcium phenylpyruvate;

cxiii. phenylpyruvic acid sodium salt;

cxiv. 4-hydroxyphenyl pyruvic acid;

cxv. sodium alpha-ketoisovaleric acid;

cxvi. benzoylformic acid);

cxvii. 4-methylthio-2-oxopentanoic acid;

cxviii. 4-methyl-2-oxopentanoic acid;

cxix. 4-methylthio-2-oxybutanoic acid;

cxx. 2-oxybutanoic acid;

cxxi. D, L-alpha-hydroxybutyric acid sodium salt;

cxxii. indole-3-pyruvic acid;

cxxiii. cysteamine;

cxxiv. pantetheine;

cxxv. S-adenosylmethionine;

cxxvi. ethyl bromopyruvate;

cxxvii. methyl bromopyruvate;

cxxviii. bromopyruvate; and

cxxix. 5-S-cysteinyldopamine.

29 (New). The method according to claim 26, wherein the compound is selected from the group consisting of:

i. 2-oxo-3pentynoate;

ii. aminoguanidine or salts thereof;

iii. benzoic acid;

iv. sodium benzoate;

v. 2-aminobenzoate;

vi. 3-aminobenzoate;

vii. 4-aminobenzoate;

viii. methylglyoxal bis(guanylhydrazone);

ix. methylglyoxal bis(guanylhydrazone) dihydrochloride;

x. phenylglyoxal bis(guanylhydrazone) (PhGBG);

xi. glyoxal bis(guanylhydrazone);

xiii. 3-indole-acetic acid;

xiv. indole-3-acetic acid;

xv. indole-3-acetone;

xvi. indole-3-acetamide;

xvii. indole-3-acetyl-L-aspartic acid;

xviii. indole-3-acetyl-L-alanine;

xix. indole-3-acetylglycine;

xx. indole-3-acetaldehyde sodium bisulfite;

xxi. indole-3-carboxylic acid;

xxii. indole-3-pyruvic acid;

xxiii. salicylic acid;

xxiv. salicylic acid sodium salts;

xxv. salicylic acid potassium salts;

xxvi. dansyl chloride;

xxvii. dansyl fluoride;

xxviii. dansyl glycine;

xxix. alanine tetrazole;

xxx. benzoic tetrazole;

xxxi. tetrazole;

xxxii. riboflavin 5'-pyrophosphate;

xxxiii. D, L-propargylglycine;

xxxiv. L-C-propargylglycine;

xxxv. N-acetyl-DL-proparglyglycine;

xxxvi. (±)-sodium 3-hydroxybutyrate;

xxxvii. trigonelline hydrochloride;

xxxviii. N-methylnicotinate;

xxxix. methyl 6-methylnicotinate;

xl. ethyl 2-methylnicotinate;

xli. kojic acid;

xlii. 6-(pyrrolidinomethyl)-kojic acid hydrochloride, 6-(morpholinomethyl)-kojic acid, 6-(diethylaminomethyl)-kojic acid hydrochloride;

xliii. O-(2,4-dinitrophenyl)hydroxylamine;

xliv. 2,4-dinirophenyl glycine;

xlv. hydroxylamine hydrochloride;

xlvi. methyl-p-nitrobenzenesulfonate;

xlvii. aminoethylcysteine-ketimine;

xlviii. 1,4-thiazine derivatives;

xlix. 4-phenyl-1,4-sulfonazan;

l. phenothiazine;

li. 3,4-dihydro-2H-1,4-thiazine-3,5-dicarboxylic acid;

lii. nifurtimox;

liii. 3-(1-pyrrolidinylmethy)-4-(5,6-dichloro-1-indancarbonyl)-tetrahydro-1,4-thiazine hydrochloride;

liv. ketimine reduced forms;

lv. cystathionine;

lvi. cystathionine ketimine;

lxi. lanthionine ketimine;

lxii. thiomorpholine-2-carboxylic acid;

lix. thiomorpholine-2,6-dicarboxylic acid;

lx. TMDA (1,4-thiomorpholine-3,5-dicarboxylic acid);

lxi. 1-chloro-1-nitroethane;

lxii. anthranilate;

lxiii. ethyl 2-aminobenzoate;

lxiv. methyl 2-aminobenzoate;

lxv. picolinate;

lxvi. ethyl picolinate;

lxvii. L-leucine methyl ester hydrochloride;

lxviii. L-leucine;

lxix. flurodinitrobenzene;

lxx. dinitrochlorobenzene;

lxxi. 1,2-cyclohexanedione;

lxxii. allyglycine;

lxxiii. 2-amino-2,4-pentadienoate;

lxxiv. 2-hydroxy-2,4-pentadienoate;

lxxv. 2-amino-4-keto-2-pentenoate;

lxxvi. 2-hydroxybutyrate;

lxxvii. sodium 2-hydroxybutyrate;

lxxviii. N-chloro-D-leucine;

lxxix. N-acetyl-D-leucine;

lxxx. D-2-amino-4-methylpentanoic acid;

lxxxi. D, L-propargylglycine;

lxxxii. progesterone;

lxxxiii. FAD (flavin adenine dinucleotide);

lxxxiv. 6-OH-FAD;

lxxxv. phenylglyoxal;

lxxxvi. phenylglyoxal monohydrate;

lxxxvii. cyclothionine;

lxxxviii. alpha-alpha'-iminodipropionic;

lxxxix. meso-diaminosuccinic acid;

xc. thiosemicarbazide;

xci. thiourea;

xcii. methylthiouracil;

xciii. sulphathiazole;

xciv. sulfathiazole Salt;

xcv. thiocyanate;

xcvi. 3-methylbenzyl thiocyanate;

xcvii. methimazole;

xcviii. dicarboxylic hydroxyacids;

xcix. 1,3-acetonedicarboxylic acid;

c. D-tartaric acid;

ci. L-tartaric acid;

cii. D, L-tartaric acid;

ciii. potassium tartarate;

civ. D-malic acid;

cv. L-malic acid;

cvi. D, L-malic acid;

cvii. alpha-keto acids that are analogues of the amino acids alanine, leucine, phenylanaline, phenylglycine, tyrosine, serine, aspartate, and salts thereof;

cviii. pyruvic acid;

cix. sodium pyruvate;

cx. pyruvic acid methyl ester;

cxi. phenylpyruvic acid;

cxii. calcium phenylpyruvate;

cxiii. phenylpyruvic acid sodium salt;

cxiv. 4-hydroxyphenyl pyruvic acid;

cxv. sodium alpha-ketoisovaleric acid;

cxvi. benzoylformic acid);

cxvii. 4-methylthio-2-oxopentanoic acid;

cxviii. 4-methyl-2-oxopentanoic acid;

cxix. 4-methylthio-2-oxybutanoic acid;

cxx. 2-oxybutanoic acid;

cxxi. D, L-alpha-hydroxybutyric acid sodium salt;

cxxii. indole-3-pyruvic acid;

cxxiii. cysteamine;

cxxiv. pantetheine;

cxxv. S-adenosylmethionine;

cxxvi. ethyl bromopyruvate;

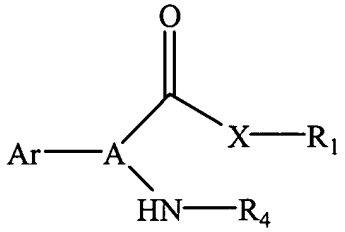
cxxvii. methyl bromopyruvate;

cxxviii. bromopyruvate; and

cxxix. 5-S-cysteinyldopamine.

30 (New). The method according to claim 19, 20, 21, 22, or 23, wherein said test compound is:

(1) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A is alkyl; branched chain alkyl; or cycloalkyl, any of which can be substituted with C_1-C_6 alkyl, halo, hydroxyl or amino;

b) X is O or N;

c) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to five position(s) with hydrogen, halogen, hydroxyl, -CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2 COR_3, --NR_3 $COOR_3$, --SO_2 NR_2 R_3, --$N(R_2)$ SO_2 R_3, --NR_2 $CONR_2$ R_2, --SO_2 $NHCOR_2$, --$CONHSO_2$ R_2, --SO_2NHCN, --OR_1, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, N_3 or a combination thereof and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

d) R_4 is H, alkyl, Ar^1, O, or a substituted alkyl;

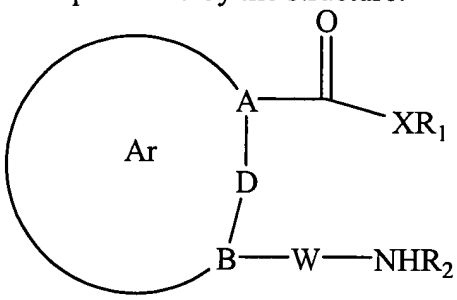
e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or a substituted alkyl;

f) R_2 and R_3 are each independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or aklenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and

wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(2) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B are carbon or nitrogen and D has 0-2 members that are carbon or nitrogen;

b) W is $(CH_2)_n$ or a branched chain alkyl, wherein n is 0-4 and when n=0 NHR_2 is covalently bound to B;

c) X is O or N;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

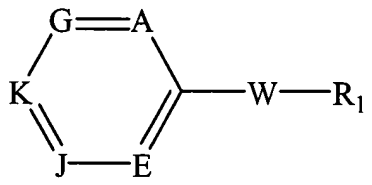
e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or substituted alkyl;

f) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to six position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 3-7

members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(3) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A, G, K, J, E are members of a six membered carbon or heterocyclic aromatic ring, wherein the heterocyclic ring contains 1-6 atom(s) selected from the group consisting of C, N and a combination thereof:

b) A, G, K, J, E may each independently be unsubstituted or substituted with hydrogen, halogen, hydroxyl, -CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, --OR_1, C_1-C_6 straight or branched chain alkyl, C_1-C_6 straight or branched chain alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

c) R_1 is CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, SCN, $COCO_2H$, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

d) W is N, $(CH_2)_x$, or $-NCH_2$;

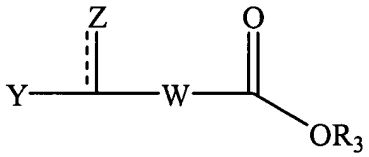
e) x=0-4;

f) n=0-2;

g) R_2 and R_3 are each, independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(4) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) $W=(CH_2)_n$;

b) n=0-5;

c) Z is oxygen or hydroxyl;

d) Y= H, Ar^1, R_4 $(CH_2)_x$, $R_1S(CH_2)_x$--, $R_1SO(CH_2)_x$--, $R_1SO_2(CH_2)_x$--, $R_1SO_3(CH_2)_x$--, $HNR_1SO_2(CH_2)_x$--, $R_1R_2N(CH_2)_x$, $R_1O(CH_2)$--, CF_3, or OH;

e) x=0-6;

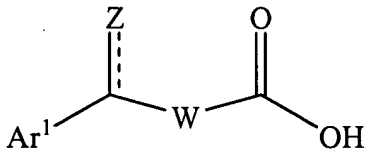
f) R_1, R_2 and R_3 are each independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or

more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

g) R_4 is a halogen, CN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, phosphate, Ar^1, --COR_1, --$COOR_1$, $CONR_1R_2$, CN, --NR_1, --NR_1R_2,-- SR_1, --SO_2NHCN, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(5) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) Y is Ar^1;

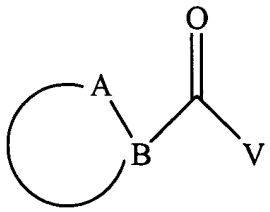
b) Z is a carbonyl or hydroxyl;

c) W is $(CH_2)_n$ wherein n = 0, 1, or 2; and

d) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and

wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(6) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B taken together, form a 5-8 membered saturated or partially unsaturated heterocyclic ring containing at least one additional O, S, SO, SO_2, NH, or NR^1 heteroatom in any chemically stable oxidation state;

b) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_4, or CH_2N_3;

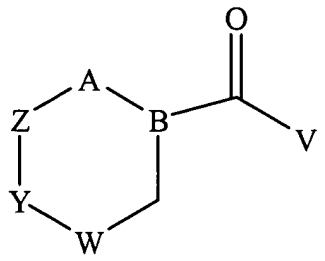
c) R_1 and R_2 are independently hydrogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, or Ar^1;

d) R_3 and R_4 are either halogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$, $CONR_1R_2$, CN, NR_1, NR_1R_2, SR_1, SO_2NHCN, or N_3; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and

wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(7) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) W-Y-Z-A-B comprise a six membered saturated or partially saturated carbocyclic or heterocyclic ring, wherein the heterocyclic ring contains heteroatom(s) selected from the group consisting of -O, N, S, and any combination thereof:

b) B is either C, CH, or N;

c) A, W, Y, Z are each independently CH_2, CHR_3, CR_3R_4, O, S, SO, SO_2, NH, NR_1, NR_1R_2, or C=O;

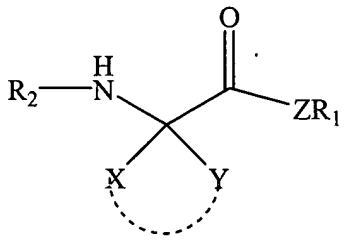
d) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_3 or CH_2N_3;

e) R_1 and R_2 are independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

f) R_3 and R_4 are each independently halogen, --$OC(O)R_1$, --$COOR_1$, --$CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$,-- $CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(8) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) Z is O or NH;

b) R^1 is C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

c) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen,

wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times and

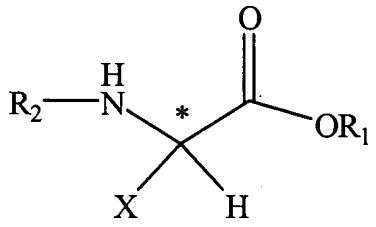
when X and Y are each carbon, they may be covalently joined to form a saturated or partially unsaturated cyclic compound of 3-8 members consisting independently of C, N, O, and S, further wherein ring members may themselves be unsubstituted or substituted with halo, hydroxyl, carboxy, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl,

C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, substituted alkyl, Ar^1, or a combination thereof;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(9) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) * = asymmetric center;

b) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

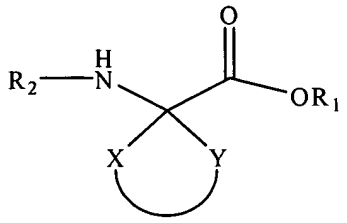
c) X is H, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, halogen, or Ar^1, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a

combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(10) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) X and Y are each carbon;

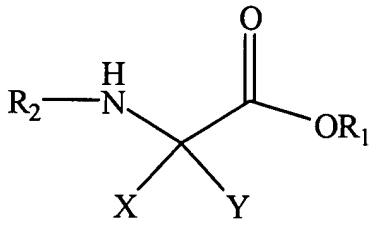
b) X and Y are connected by a saturated or partially saturated ring of 3-8 carbons and such a ring may itself be substituted in one to five position(s) with halo, hydroxyl, carboxy, amino, nitro, cyano, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, or substituted alkyl groups;

c) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(11) a compound represented by the structure:



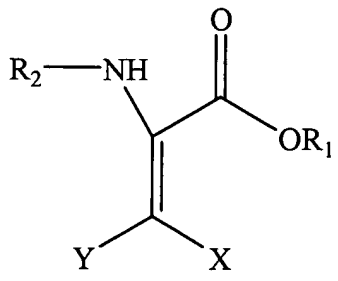
or pharmaceutically acceptable salts thereof, wherein:

a) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

c) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof; or

(12) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

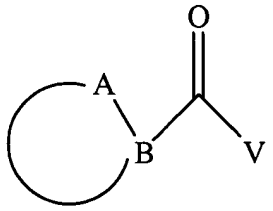
a) $R^1 = C_1$-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

c) Y is H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times; and

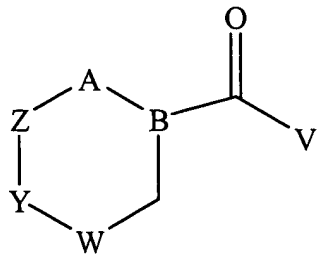
d) X is alkyl or phenyl.

31 (New). The method according to claim 30, wherein said compound represented by the structure:



is cystathionine ketimine or cyclothionine.

32 (New). The method according to claim 30, wherein said compound represented by the structure:

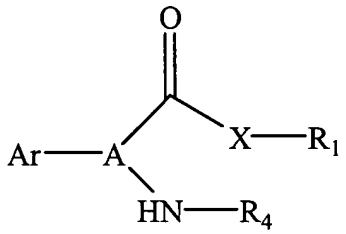


is selected from the group consisting of: aminoethylcysteine-ketimine (2H-1,4-thiazine-5,6-dihydro-3-carboxylic acid), thiomorpholine-2-carboxylic acid, lanthionine ketimine, and 1,4-thiomorpholine-3, 5-dicarboxylic acid.

33 (New). A method of treating a central nervous system disorder comprising the administration of a therapeutically effective amount of a compositions comprising a carrier and a compound capable reducing the conversion of a D-amino acid into the corresponding α-keto acid.

34 (New). The method according to claim 33, wherein said compound is selected from the group consisting of:

(1) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A is alkyl; branched chain alkyl; or cycloalkyl, any of which can be substituted with C_1-C_6 alkyl, halo, hydroxyl or amino;

b) X is O or N;

c) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to five position(s) with hydrogen, halogen, hydroxyl, -CN, COR_2, $--CONR_2R_3$, $--S(O)_nR_2$, $--OPO(OR_2)OR_3$, $--PO(OR_3)R_3$, $--OC(O)NR_2R_3$, $--COOR_2$, $--CONR_2R_3$, $--SO_3H$, $--NR_2R_3$, $--NR_2\,COR_3$, $--NR_3\,COOR_3$, $--SO_2\,NR_2\,R_3$, $--N(R_2)\,SO_2\,R_3$, $--NR_2\,CONR_2\,R_2$, $--SO_2\,NHCOR_2$, $--CONHSO_2\,R_2$, $--SO_2NHCN$, $--OR_1$, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, N_3 or a combination thereof and wherein the heterocyclic ring contains 1-6

heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

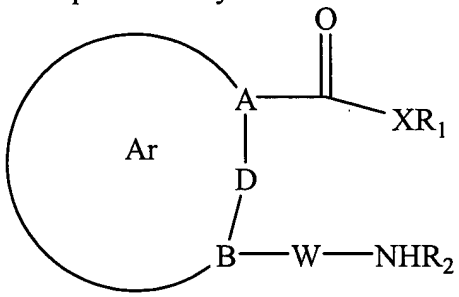
d) R_4 is H, alkyl, Ar^1, O, or a substituted alkyl;

e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or a substituted alkyl;

f) R_2 and R_3 are each independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or aklenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(2) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B are carbon or nitrogen and D has 0-2 members that are carbon or nitrogen;

b) W is $(CH_2)_n$ or a branched chain alkyl, wherein n is 0-4 and when n=0 NHR_2 is covalently bound to B;

c) X is O or N;

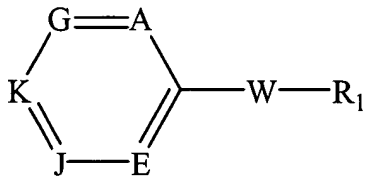
d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or substituted alkyl;

f) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to six position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(3) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A, G, K, J, E are members of a six membered carbon or heterocyclic aromatic ring, wherein the heterocyclic ring contains 1-6 atom(s) selected from the group consisting of C, N and a combination thereof:

b) A, G, K, J, E may each independently be unsubstituted or substituted with hydrogen, halogen, hydroxyl, -CN, COR_2, $--CONR_2R_3$, $--S(O)_nR_2$, $--OPO(OR_2)OR_3$, $--PO(OR_3)R_3$, $--OC(O)NR_2R_3$, $--COOR_2$, $--CONR_2R_3$,

--SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, --OR_1, C_1-C_6 straight or branched chain alkyl, C_1-C_6 straight or branched chain alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

c) R_1 is CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, SCN, $COCO_2H$, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

d) W is N, $(CH_2)_x$, or $-NCH_2$;

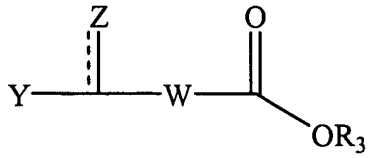
e) x=0-4;

f) n=0-2;

g) R_2 and R_3 are each, independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(4) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) $W=(CH_2)_n$;

b) n=0-5;

c) Z is oxygen or hydroxyl;

d) Y= H, Ar^1, R_4 $(CH_2)_x$, $R_1S(CH_2)_x$--, $R_1SO(CH_2)_x$--, $R_1SO_2(CH_2)_x$--, $R_1SO_3(CH_2)_x$--, $HNR_1SO_2(CH_2)_x$--, $R_1R_2N(CH_2)_x$, $R_1O(CH_2)$--, CF_3, or OH;

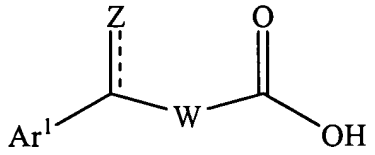
e) x=0-6;

f) R_1, R_2 and R_3 are each independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

g) R_4 is a halogen, CN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, phosphate, Ar^1, --COR_1, --$COOR_1$, $CONR_1R_2$, CN, --NR_1, --NR_1R_2,-- SR_1, --SO_2NHCN, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(5) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

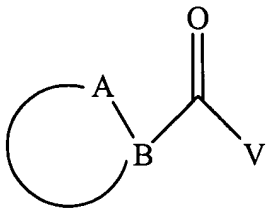
a) Y is Ar^1;

b) Z is a carbonyl or hydroxyl;

c) W is $(CH_2)_n$ wherein n = 0, 1, or 2; and

d) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(6) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B taken together, form a 5-8 membered saturated or partially unsaturated heterocyclic ring containing at least one additional O, S, SO, SO_2, NH, or NR^1 heteroatom in any chemically stable oxidation state;

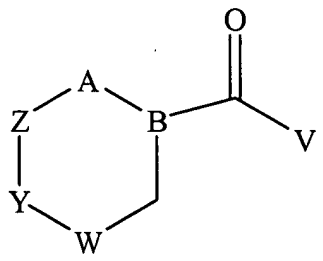
b) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_4, or CH_2N_3;

c) R_1 and R_2 are independently hydrogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, or Ar^1;

d) R_3 and R_4 are either halogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$, $CONR_1R_2$, CN, NR_1, NR_1R_2, SR_1, SO_2NHCN, or N_3; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(7) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) W-Y-Z-A-B comprise a six membered saturated or partially saturated carbocyclic or heterocyclic ring, wherein the heterocyclic ring contains heteroatom(s) selected from the group consisting of -O, N, S, and any combination thereof:

b) B is either C, CH, or N;

c) A, W, Y, Z are each independently CH_2, CHR_3, CR_3R_4, O, S, SO, SO_2, NH, NR_1, NR_1R_2, or C=O;

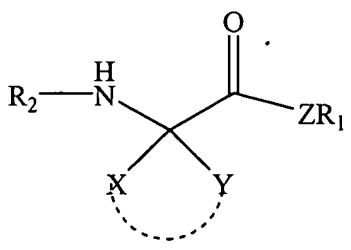
d) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_3 or CH_2N_3;

e) R_1 and R_2 are independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

f) R_3 and R_4 are each independently halogen, --$OC(O)R_1$, --$COOR_1$, --$CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$,-- $CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(8) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) Z is O or NH;

b) R^1 is C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

c) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen,

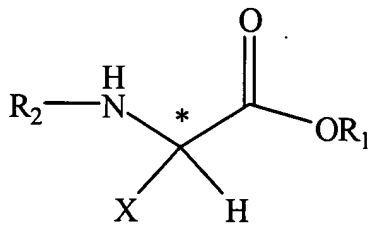
wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times and

when X and Y are each carbon, they may be covalently joined to form a saturated or partially unsaturated cyclic compound of 3-8 members consisting independently of C, N, O, and S, further wherein ring members may themselves be unsubstituted or substituted with halo, hydroxyl, carboxy, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, substituted alkyl, Ar^1, or a combination thereof;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(9) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) * = asymmetric center;

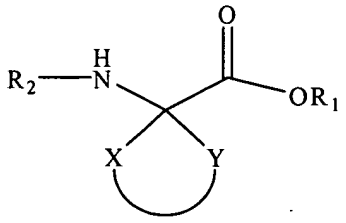
b) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

c) X is H, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, halogen, or Ar^1, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(10) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) X and Y are each carbon;

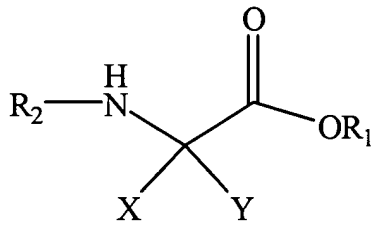
b) X and Y are connected by a saturated or partially saturated ring of 3-8 carbons and such a ring may itself be substituted in one to five position(s) with halo, hydroxyl, carboxy, amino, nitro, cyano, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, or substituted alkyl groups;

c) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(11) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

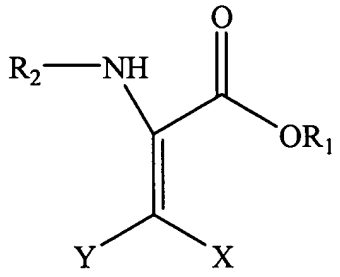
a) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

c) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and

wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof; and

(12) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

c) Y is H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times; and

d) X is alkyl or phenyl.

35 (New). The method according to claim 33, wherein the compound is selected from the group consisting of:

i. 2-oxo-3pentynoate;

ii. aminoguanidine or salts thereof;

iii. benzoic acid;

iv. sodium benzoate;

v. 2-aminobenzoate;

vi. 3-aminobenzoate;

vii. 4-aminobenzoate;

viii. methylglyoxal bis(guanylhydrazone);

ix. methylglyoxal bis(guanylhydrazone) dihydrochloride;

x. phenylglyoxal bis(guanylhydrazone) (PhGBG);

xi. glyoxal bis(guanylhydrazone);

xiii. 3-indole-acetic acid;

xiv. indole-3-acetic acid;

xv. indole-3-acetone;

xvi. indole-3-acetamide;

xvii. indole-3-acetyl-L-aspartic acid;

xviii. indole-3-acetyl-L-alanine;

xix. indole-3-acetylglycine;

xx. indole-3-acetaldehyde sodium bisulfite;

xxi. indole-3-carboxylic acid;

xxii. indole-3-pyruvic acid;

xxiii. salicylic acid;

xxiv. salicylic acid sodium salts;

xxv. salicylic acid potassium salts;

xxvi. dansyl chloride;

xxvii. dansyl fluoride;

xxviii. dansyl glycine;

xxix. alanine tetrazole;

xxx. benzoic tetrazole;

xxxi. tetrazole;

xxxii. riboflavin 5'-pyrophosphate;

xxxiii. D, L-propargylglycine;

xxxiv. L-C-propargylglycine;

xxxv. N-acetyl-DL-proparglyglycine;

xxxvi. (±)-sodium 3-hydroxybutyrate;

xxxvii. trigonelline hydrochloride;

xxxviii. N-methylnicotinate;

xxxix. methyl 6-methylnicotinate;

xl. ethyl 2-methylnicotinate;

xli. kojic acid;

xlii. 6-(pyrrolidinomethyl)-kojic acid hydrochloride, 6-(morpholinomethyl)-kojic acid, 6-(diethylaminomethyl)-kojic acid hydrochloride;

xliii. O-(2,4-dinitrophenyl)hydroxylamine;

xliv. 2,4-dinirophenyl glycine;

xlv. hydroxylamine hydrochloride;

xlvi. methyl-p-nitrobenzenesulfonate;

xlvii. aminoethylcysteine-ketimine;

xlviii. 1,4-thiazine derivatives;

xlix. 4-phenyl-1,4-sulfonazan;

l. phenothiazine;

li. 3,4-dihydro-2H-1,4-thiazine-3,5-dicarboxylic acid;

lii. nifurtimox;

liii. 3-(1-pyrrolidinylmethy)-4-(5,6-dichloro-1-indancarbonyl)-tetrahydro-1,4-thiazine hydrochloride;

liv. ketimine reduced forms;

lv. cystathionine;

lvi. cystathionine ketimine;

lvii. lanthionine ketimine;

lviii. thiomorpholine-2-carboxylic acid;

lix. thiomorpholine-2,6-dicarboxylic acid;

lx. TMDA (1,4-thiomorpholine-3,5-dicarboxylic acid);

lxi. 1-chloro-1-nitroethane;

lxii. anthranilate;

lxiii. ethyl 2-aminobenzoate;

lxiv. methyl 2-aminobenzoate;

lxv. picolinate;

lxvi. ethyl picolinate;

lxvii. L-leucine methyl ester hydrochloride;

lxviii. L-leucine;

lxix. flurodinitrobenzene;

lxx. dinitrochlorobenzene;

lxxi. 1,2-cyclohexanedione;

lxxii. allyglycine;

lxxiii. 2-amino-2,4-pentadienoate;

lxxiv. 2-hydroxy-2,4-pentadienoate;

lxxv. 2-amino-4-keto-2-pentenoate;

lxxvi. 2-hydroxybutyrate;

lxxvii. sodium 2-hydroxybutyrate;

lxxviii. N-chloro-D-leucine;

lxxix. N-acetyl-D-leucine;

lxxx. D-2-amino-4-methylpentanoic acid;

lxxxi. D, L-propargylglycine;

lxxxii. progesterone;

lxxxiii. FAD (flavin adenine dinucleotide);

lxxxiv. 6-OH-FAD;

lxxxv. phenylglyoxal;

lxxxvi. phenylglyoxal monohydrate;

lxxxvii. cyclothionine;

lxxxviii. alpha-alpha'-iminodipropionic;

lxxxix. meso-diaminosuccinic acid;

xc. thiosemicarbazide;

xci. thiourea;

xcii. methylthiouracil;

xciii. sulphathiazole;

xciv. sulfathiazole Salt;

xcv. thiocyanate;

xcvi. 3-methylbenzyl thiocyanate;

xcvii. methimazole;

xcviii. dicarboxylic hydroxyacids;

xcix. 1,3-acetonedicarboxylic acid;

c. D-tartaric acid;

ci. L-tartaric acid;

cii. D, L-tartaric acid;

ciii. potassium tartarate;

civ. D-malic acid;

cv. L-malic acid;

cvi. D, L-malic acid;

cvii. alpha-keto acids that are analogues of the amino acids alanine, leucine, phenylanaline, phenylglycine, tyrosine, serine, aspartate, and salts thereof;

cviii. pyruvic acid;

cix. sodium pyruvate;

cx. pyruvic acid methyl ester;

cxi. phenylpyruvic acid;

cxii. calcium phenylpyruvate;

cxiii. phenylpyruvic acid sodium salt;

cxiv. 4-hydroxyphenyl pyruvic acid;

cxv. sodium alpha-ketoisovaleric acid;

cxvi. benzoylformic acid);

cxvii. 4-methylthio-2-oxopentanoic acid;

cxviii. 4-methyl-2-oxopentanoic acid;

cxix. 4-methylthio-2-oxybutanoic acid;

cxx. 2-oxybutanoic acid;

cxxi. D, L-alpha-hydroxybutyric acid sodium salt;

cxxii. indole-3-pyruvic acid;

cxxiii. cysteamine;

cxxiv. pantetheine;

cxxv. S-adenosylmethionine;

cxxvi. ethyl bromopyruvate;

cxxvii. methyl bromopyruvate;

cxxviii. bromopyruvate; and

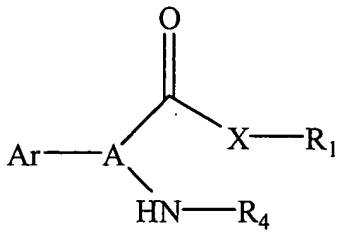
cxxix. 5-S-cysteinyldopamine.

36 (New). The method according to claim 33, wherein said compound is selected from the group consisting of benzoate, aminoethylcysteine-ketimine; aminoethylcysteine (thialysine); cysteamine; pathetheine; cystathionine S-adenosylmethionine, and derivatives thereof.

37 (New). A method of reducing the activity of a D-amino acid oxidase polypeptide (DAO) or a D-aspartate oxidase (DDO) polypeptide comprising the administration of a composition comprising a carrier and a compound that reduces the activity of said polypeptide.

38 (New). The method according to claim 37, wherein said compound is selected from the group consisting of:

(1) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A is alkyl; branched chain alkyl; or cycloalkyl, any of which can be substituted with C_1-C_6 alkyl, halo, hydroxyl or amino;

b) X is O or N;

c) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to five position(s) with hydrogen, halogen, hydroxyl, -CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --$NR_2\,COR_3$, --$NR_3\,COOR_3$, --$SO_2\,NR_2\,R_3$, --$N(R_2)\,SO_2\,R_3$, --$NR_2\,CONR_2\,R_2$, --$SO_2\,NHCOR_2$, --$CONHSO_2\,R_2$, --SO_2NHCN, --OR_1, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, N_3 or a combination thereof and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

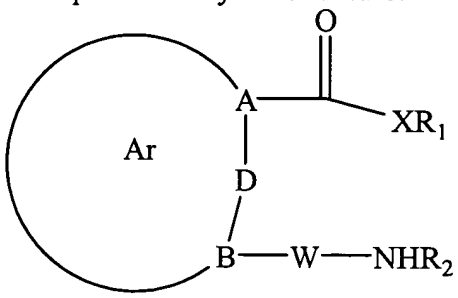
d) R_4 is H, alkyl, Ar^1, O, or a substituted alkyl;

e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or a substituted alkyl;

f) R_2 and R_3 are each independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or aklenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(2) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B are carbon or nitrogen and D has 0-2 members that are carbon or nitrogen;

b) W is $(CH_2)_n$ or a branched chain alkyl, wherein n is 0-4 and when n=0 NHR_2 is covalently bound to B;

c) X is O or N;

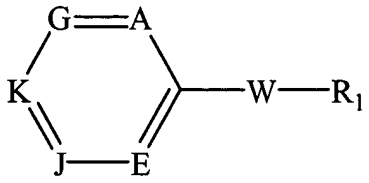
d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or substituted alkyl;

f) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to six position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(3) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A, G, K, J, E are members of a six membered carbon or heterocyclic aromatic ring, wherein the heterocyclic ring contains 1-6 atom(s) selected from the group consisting of C, N and a combination thereof:

b) A, G, K, J, E may each independently be unsubstituted or substituted with hydrogen, halogen, hydroxyl, -CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, --OR_1, C_1-C_6 straight or branched chain alkyl, C_1-C_6 straight or branched chain alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

c) R_1 is CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, SCN, $COCO_2H$, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

d) W is N, $(CH_2)_x$, or $-NCH_2$;

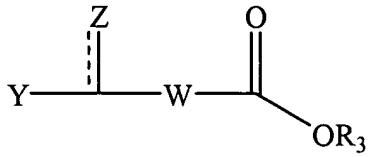
e) x=0-4;

f) n=0-2;

g) R_2 and R_3 are each, independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(4) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) $W=(CH_2)_n$;

b) n=0-5;

c) Z is oxygen or hydroxyl;

d) Y= H, Ar^1, R_4 $(CH_2)_x$, $R_1S(CH_2)_x$--, $R_1SO(CH_2)_x$--, $R_1SO_2(CH_2)_x$--, $R_1SO_3(CH_2)_x$--, $HNR_1SO_2(CH_2)_x$--, $R_1R_2N(CH_2)_x$, $R_1O(CH_2)$--, CF_3, or OH;

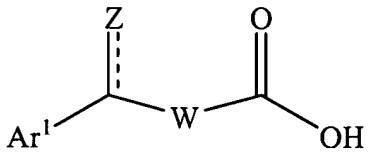
e) x=0-6;

f) R_1, R_2 and R_3 are each independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

g) R_4 is a halogen, CN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, phosphate, Ar^1, --COR_1, --$COOR_1$, $CONR_1R_2$, CN, --NR_1, --NR_1R_2,-- SR_1, --SO_2NHCN, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(5) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

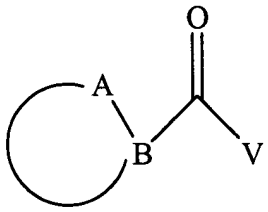
a) Y is Ar^1;

b) Z is a carbonyl or hydroxyl;

c) W is $(CH_2)_n$ wherein n = 0, 1, or 2; and

d) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(6) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B taken together, form a 5-8 membered saturated or partially unsaturated heterocyclic ring containing at least one additional O, S, SO, SO_2, NH, or NR^1 heteroatom in any chemically stable oxidation state;

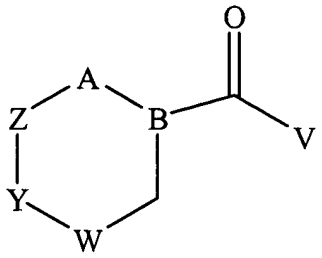
b) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_4, or CH_2N_3;

c) R_1 and R_2 are independently hydrogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, or Ar^1;

d) R_3 and R_4 are either halogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$, $CONR_1R_2$, CN, NR_1, NR_1R_2, SR_1, SO_2NHCN, or N_3; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(7) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) W-Y-Z-A-B comprise a six membered saturated or partially saturated carbocyclic or heterocyclic ring, wherein the heterocyclic ring contains heteroatom(s) selected from the group consisting of -O, N, S, and any combination thereof:

b) B is either C, CH, or N;

c) A, W, Y, Z are each independently CH_2, CHR_3, CR_3R_4, O, S, SO, SO_2, NH, NR_1, NR_1R_2, or C=O;

d) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_3 or CH_2N_3;

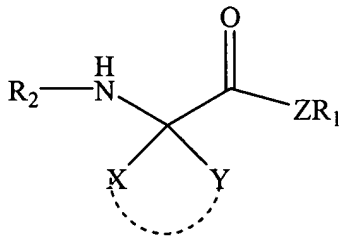
e) R_1 and R_2 are independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

f) R_3 and R_4 are each independently halogen, --$OC(O)R_1$, --$COOR_1$, --$CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$,-- $CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a

combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(8) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) Z is O or NH;

b) R^1 is C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

c) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen,

wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times and

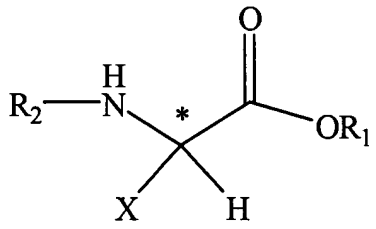
when X and Y are each carbon, they may be covalently joined to form a saturated or partially unsaturated cyclic compound of 3-8 members consisting independently of C, N, O, and S, further wherein ring members may themselves be unsubstituted or substituted with halo, hydroxyl, carboxy, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, substituted alkyl, Ar^1, or a combination thereof;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo,

hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(9) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) * = asymmetric center;

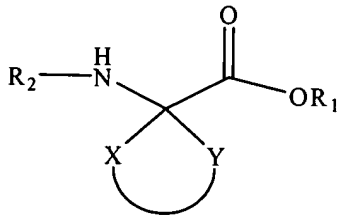
b) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

c) X is H, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, halogen, or Ar^1, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(10) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) X and Y are each carbon;

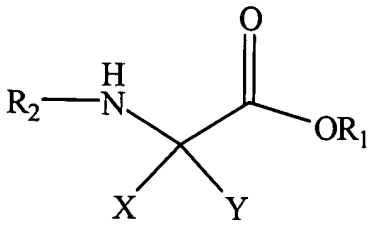
b) X and Y are connected by a saturated or partially saturated ring of 3-8 carbons and such a ring may itself be substituted in one to five position(s) with halo, hydroxyl, carboxy, amino, nitro, cyano, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, or substituted alkyl groups;

c) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(11) a compound represented by the structure:



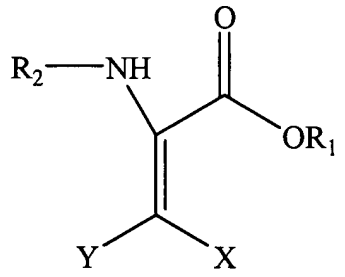
or pharmaceutically acceptable salts thereof, wherein:

a) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

c) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof; and

(12) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

c) Y is H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms

selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times; and

d) X is alkyl or phenyl;

and wherein said polypeptide sequence selected from the group consisting of SEQ ID NOS: 7 to 10, 21 and 22.

39 (New). The method according to claim 37, wherein the compound is selected from the group consisting of:

i. 2-oxo-3pentynoate;
ii. aminoguanidine or salts thereof;
iii. benzoic acid;
iv. sodium benzoate;
v. 2-aminobenzoate;
vi. 3-aminobenzoate;
vii. 4-aminobenzoate;
viii. methylglyoxal bis(guanylhydrazone);
ix. methylglyoxal bis(guanylhydrazone) dihydrochloride;
x. phenylglyoxal bis(guanylhydrazone) (PhGBG);
xi. glyoxal bis(guanylhydrazone);
xiii. 3-indole-acetic acid;
xiv. indole-3-acetic acid;
xv. indole-3-acetone;
xvi. indole-3-acetamide;
xvii. indole-3-acetyl-L-aspartic acid;
xviii. indole-3-acetyl-L-alanine;
xix. indole-3-acetylglycine;
xx. indole-3-acetaldehyde sodium bisulfite;
xxi. indole-3-carboxylic acid;

xxii. indole-3-pyruvic acid;

xxiii. salicylic acid;

xxiv. salicylic acid sodium salts;

xxv. salicylic acid potassium salts;

xxvi. dansyl chloride;

xxvii. dansyl fluoride;

xxviii. dansyl glycine;

xxix. alanine tetrazole;

xxx. benzoic tetrazole;

xxxi. tetrazole;

xxxii. riboflavin 5'-pyrophosphate;

xxxiii. D, L-propargylglycine;

xxxiv. L-C-propargylglycine;

xxxv. N-acetyl-DL-proparglyglycine;

xxxvi. (±)-sodium 3-hydroxybutyrate;

xxxvii. trigonelline hydrochloride;

xxxviii. N-methylnicotinate;

xxxix. methyl 6-methylnicotinate;

xl. ethyl 2-methylnicotinate;

xli. kojic acid;

xlii. 6-(pyrrolidinomethyl)-kojic acid hydrochloride, 6-(morpholinomethyl)-kojic acid, 6-(diethylaminomethyl)-kojic acid hydrochloride;

xliii. O-(2,4-dinitrophenyl)hydroxylamine;

xliv. 2,4-dinirophenyl glycine;

xlv. hydroxylamine hydrochloride;

xlvi. methyl-p-nitrobenzenesulfonate;

xlvii. aminoethylcysteine-ketimine;

xlviii. 1,4-thiazine derivatives;

xlix. 4-phenyl-1,4-sulfonazan;

l. phenothiazine;

li. 3,4-dihydro-2H-1,4-thiazine-3,5-dicarboxylic acid;

lii. nifurtimox;

liii. 3-(1-pyrrolidinylmethy)-4-(5,6-dichloro-1-indancarbonyl)-tetrahydro-1,4-thiazine hydrochloride;

liv. ketimine reduced forms;

lv. cystathionine;

lvi. cystathionine ketimine;

lix. lanthionine ketimine;

lx. thiomorpholine-2-carboxylic acid;

lix. thiomorpholine-2,6-dicarboxylic acid;

lx. TMDA (1,4-thiomorpholine-3,5-dicarboxylic acid);

lxi. 1-chloro-1-nitroethane;

lxii. anthranilate;

lxiii. ethyl 2-aminobenzoate;

lxiv. methyl 2-aminobenzoate;

lxv. picolinate;

lxvi. ethyl picolinate;

lxvii. L-leucine methyl ester hydrochloride;

lxviii. L-leucine;

lxix. flurodinitrobenzene;

lxx. dinitrochlorobenzene;

lxxi. 1,2-cyclohexanedione;

lxxii. allyglycine;

lxxiii. 2-amino-2,4-pentadienoate;

lxxiv. 2-hydroxy-2,4-pentadienoate;

lxxv. 2-amino-4-keto-2-pentenoate;

lxxvi. 2-hydroxybutyrate;

lxxvii. sodium 2-hydroxybutyrate;

lxxviii. N-chloro-D-leucine;

lxxix. N-acetyl-D-leucine;

lxxx. D-2-amino-4-methylpentanoic acid;

lxxxi. D, L-propargylglycine;

lxxxii. progesterone;

lxxxiii. FAD (flavin adenine dinucleotide);

lxxxiv. 6-OH-FAD;

lxxxv. phenylglyoxal;

lxxxvi. phenylglyoxal monohydrate;

lxxxvii. cyclothionine;

lxxxviii. alpha-alpha'-iminodipropionic;

lxxxix. meso-diaminosuccinic acid;

xc. thiosemicarbazide;

xci. thiourea;

xcii. methylthiouracil;

xciii. sulphathiazole;

xciv. sulfathiazole Salt;

xcv. thiocyanate;

xcvi. 3-methylbenzyl thiocyanate;

xcvii. methimazole;

xcviii. dicarboxylic hydroxyacids;

xcix. 1,3-acetonedicarboxylic acid;

c. D-tartaric acid;

ci. L-tartaric acid;

cii. D, L-tartaric acid;

ciii. potassium tartarate;

civ. D-malic acid;

cv. L-malic acid;

cvi. D, L-malic acid;

cvii. alpha-keto acids that are analogues of the amino acids alanine, leucine, phenylanaline, phenylglycine, tyrosine, serine, aspartate, and salts thereof;

cviii. pyruvic acid;

cix. sodium pyruvate;

cx. pyruvic acid methyl ester;

cxi. phenylpyruvic acid;

cxii. calcium phenylpyruvate;

cxiii. phenylpyruvic acid sodium salt;

cxiv. 4-hydroxyphenyl pyruvic acid;

cxv. sodium alpha-ketoisovaleric acid;

cxvi. benzoylformic acid);

cxvii. 4-methylthio-2-oxopentanoic acid;

cxviii. 4-methyl-2-oxopentanoic acid;

cxix. 4-methylthio-2-oxybutanoic acid;

cxx. 2-oxybutanoic acid;

cxxi. D, L-alpha-hydroxybutyric acid sodium salt;

cxxii. indole-3-pyruvic acid;

cxxiii. cysteamine;

cxxiv. pantetheine;

cxxv. S-adenosylmethionine;

cxxvi. ethyl bromopyruvate;

cxxvii. methyl bromopyruvate;

cxxviii. bromopyruvate; and

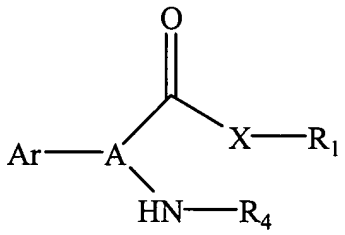
cxxix. 5-S-cysteinyldopamine.

40 (New). The method according to claim 37, wherein said compound is capable of reducing the oxidation or degradation of D-serine.

41 (New). A method of treating an individual suffering from schizophrenia, depression or bipolar disorder comprising administering to said individual a therapeutically effective amount of a composition that reduces the activity of a DAO or DDO polypeptide.

42 (New). The method according to claim 41, wherein the compound is selected from the group consisting of:

(1) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A is alkyl; branched chain alkyl; or cycloalkyl, any of which can be substituted with C_1-C_6 alkyl, halo, hydroxyl or amino;

b) X is O or N;

c) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to five position(s) with hydrogen, halogen, hydroxyl, -CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2 COR_3, --NR_3 $COOR_3$, --SO_2 NR_2 R_3, --$N(R_2)$ SO_2 R_3, --NR_2 $CONR_2$ R_2, --SO_2 $NHCOR_2$, --$CONHSO_2$ R_2, --SO_2NHCN, --OR_1, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, N_3 or a combination thereof and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

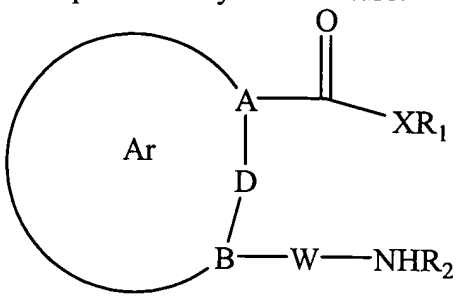
d) R_4 is H, alkyl, Ar^1, O, or a substituted alkyl;

e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or a substituted alkyl;

f) R_2 and R_3 are each independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or aklenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(2) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B are carbon or nitrogen and D has 0-2 members that are carbon or nitrogen;

b) W is $(CH_2)_n$ or a branched chain alkyl, wherein n is 0-4 and when n=0 NHR_2 is covalently bound to B;

c) X is O or N;

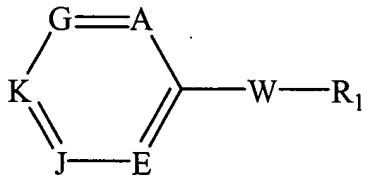
d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

e) R^1 is C_1-C_6 alkyl, Ar^1, C_1-C_4 alkoxycarbonylmethyl, or substituted alkyl;

f) Ar is an aromatic mono-, bi- or tricyclic fused heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to six position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, C_3-C_6 cycloalkyl or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(3) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A, G, K, J, E are members of a six membered carbon or heterocyclic aromatic ring, wherein the heterocyclic ring contains 1-6 atom(s) selected from the group consisting of C, N and a combination thereof:

b) A, G, K, J, E may each independently be unsubstituted or substituted with hydrogen, halogen, hydroxyl, -CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, --OR_1, C_1-C_6

straight or branched chain alkyl, C_1-C_6 straight or branched chain alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more, halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

c) R_1 is CN, COR_2, --$CONR_2R_3$, --$S(O)_nR_2$, --$OPO(OR_2)OR_3$, --$PO(OR_3)R_3$, --$OC(O)NR_2R_3$, --$COOR_2$, --$CONR_2R_3$, --SO_3H, --NR_2R_3, --NR_2COR_3, --NR_3COOR_3, --$SO_2NR_2R_3$, --$N(R_2)SO_2R_3$, --$NR_2CONR_2R_2$, --SO_2NHCOR_2, --$CONHSO_2R_2$, --SO_2NHCN, SCN, $COCO_2H$, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3;

d) W is N, $(CH_2)_x$, or $-NCH_2$;

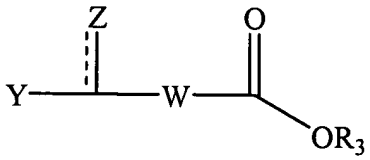
e) x=0-4;

f) n=0-2;

g) R_2 and R_3 are each, independently, hydrogen, C_1-C_6 straight or branched chain alkyl or alkenyl, or C_1-C_6 branched or straight chain alkyl or alkenyl which is substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, Ar^1, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(4) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) $W=(CH_2)_n$;

b) n=0-5;

c) Z is oxygen or hydroxyl;

d) Y= H, Ar^1, R_4 $(CH_2)_x$, $R_1S(CH_2)_x$--, $R_1SO(CH_2)_x$--, $R_1SO_2(CH_2)_x$--, $R_1SO_3(CH_2)_x$--, $HNR_1SO_2(CH_2)_x$--, $R_1R_2N(CH_2)_x$, $R_1O(CH_2)$--, CF_3, or OH;

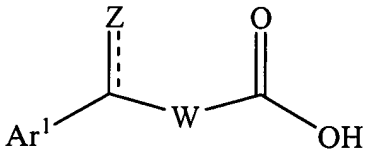
e) x=0-6;

f) R_1, R_2 and R_3 are each independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

g) R_4 is a halogen, CN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, phosphate, Ar^1, --COR_1, --$COOR_1$, $CONR_1R_2$, CN, --NR_1, --NR_1R_2,-- SR_1, --SO_2NHCN, or N_3; and

h) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(5) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

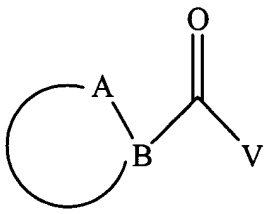
a) Y is Ar^1;

b) Z is a carbonyl or hydroxyl;

c) W is $(CH_2)_n$ wherein n = 0, 1, or 2; and

d) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(6) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) A and B taken together, form a 5-8 membered saturated or partially unsaturated heterocyclic ring containing at least one additional O, S, SO, SO_2, NH, or NR^1 heteroatom in any chemically stable oxidation state;

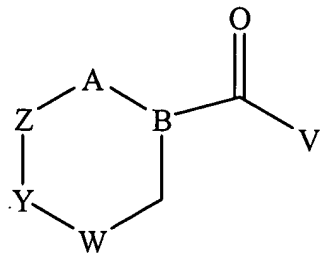
b) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_4, or CH_2N_3;

c) R_1 and R_2 are independently hydrogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, or Ar^1;

d) R_3 and R_4 are either halogen, C_1- C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more hydroxyl, amino, carboxy, carboxamide, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$, $CONR_1R_2$, CN, NR_1, NR_1R_2, SR_1, SO_2NHCN, or N_3; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and a combination thereof;

(7) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) W-Y-Z-A-B comprise a six membered saturated or partially saturated carbocyclic or heterocyclic ring, wherein the heterocyclic ring contains heteroatom(s) selected from the group consisting of -O, N, S, and any combination thereof:

b) B is either C, CH, or N;

c) A, W, Y, Z are each independently CH_2, CHR_3, CR_3R_4, O, S, SO, SO_2, NH, NR_1, NR_1R_2, or C=O;

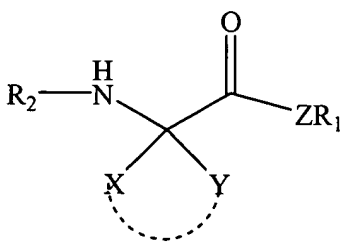
d) V is O, OR_1, NR_2, NR_1R_2, CHR_1R_2, CH_2R_3, CHR_3R_3 or CH_2N_3;

e) R_1 and R_2 are independently hydrogen, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, amino, carboxy, carboxamide, nitrile, nitro, alkoxy, trifluoromethyl, sulfur, sulfonate, phosphonate, phosphate, or Ar^1;

f) R_3 and R_4 are each independently halogen, --$OC(O)R_1$, --$COOR_1$, --$CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, N_3, C_1-C_6 straight or branched chain alkyl or C_1-C_6 branched or straight chain alkyl substituted with one or more halogen, hydroxyl, nitro, alkoxy, trifluoromethyl, sulfonate, phosphonate, Ar^1, --$OC(O)R_1$, --$COOR_1$,-- $CONR_1R_2$, CN, --NR_1, --NR_1R_2, --SR_1, --SO_2NHCN, or N_3; and

g) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 5-6 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(8) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) Z is O or NH;

b) R^1 is C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

c) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen,

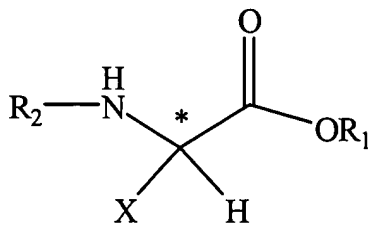
wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times and

when X and Y are each carbon, they may be covalently joined to form a saturated or partially unsaturated cyclic compound of 3-8 members consisting independently of C, N, O, and S, further wherein ring members may themselves be unsubstituted or substituted with halo, hydroxyl, carboxy, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, substituted alkyl, Ar^1, or a combination thereof;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(9) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) * = asymmetric center;

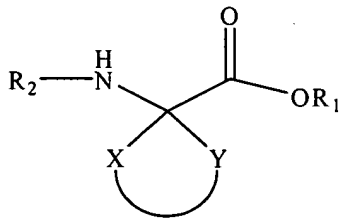
b) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

c) X is H, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, halogen, or Ar^1, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(10) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) X and Y are each carbon;

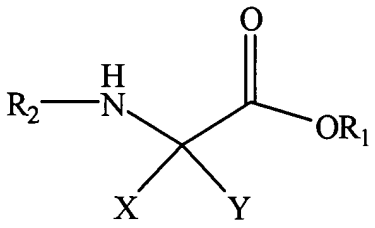
b) X and Y are connected by a saturated or partially saturated ring of 3-8 carbons and such a ring may itself be substituted in one to five position(s) with halo, hydroxyl, carboxy, amino, nitro, cyano, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, or substituted alkyl groups;

c) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

d) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

e) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof;

(11) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

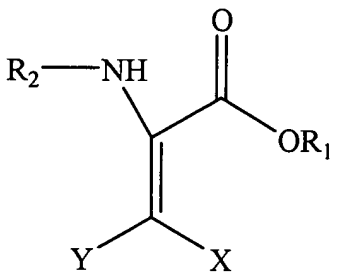
a) X, Y, independently of one another, are H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl; and

c) Ar^1 is a mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein the ring is either unsubstituted or substituted in one to three position(s) with halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl or alkenyl, C_1-C_4 alkoxy, C_1-C_4 alkenyloxy, phenoxy, benzyloxy, amino, or a combination thereof; wherein the individual ring sizes are 3-7 members; and

wherein the heterocyclic ring contains 1-6 heteroatom(s) selected from the group consisting of O, N, S, and any combination thereof; and

(12) a compound represented by the structure:



or pharmaceutically acceptable salts thereof, wherein:

a) R^1= C_1-C_6 alkyl, Ar^1, or C_1-C_4 alkoxycarbonylmethyl;

b) R_2 is H, alkyl, Ar^1, or O substituted alkyl;

c) Y is H, Ar^1, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_6 haloalkyl, or halogen, wherein said C_1-C_6 alkyl is optionally interrupted or substituted by heteroatoms selected from the group consisting of N, P, O, S and Si and said heteroatoms are optionally substituted by C_1-C_3 alkyl once or several times; and

d) X is alkyl or phenyl.

43 (New). The method according to claim 41, wherein the compound is selected from the group consisting of:

i. 2-oxo-3pentynoate;

ii. aminoguanidine or salts thereof;

iii. benzoic acid;

iv. sodium benzoate;

v. 2-aminobenzoate;

vi. 3-aminobenzoate;

vii. 4-aminobenzoate;

viii. methylglyoxal bis(guanylhydrazone);

ix. methylglyoxal bis(guanylhydrazone) dihydrochloride;

x. phenylglyoxal bis(guanylhydrazone) (PhGBG);

xi. glyoxal bis(guanylhydrazone);

xiii. 3-indole-acetic acid;

xiv. indole-3-acetic acid;

xv. indole-3-acetone;

xvi. indole-3-acetamide;

xvii. indole-3-acetyl-L-aspartic acid;

xviii. indole-3-acetyl-L-alanine;

xix. indole-3-acetylglycine;

xx. indole-3-acetaldehyde sodium bisulfite;

xxi. indole-3-carboxylic acid;

xxii. indole-3-pyruvic acid;

xxiii. salicylic acid;

xxiv. salicylic acid sodium salts;

xxv. salicylic acid potassium salts;

xxvi. dansyl chloride;

xxvii. dansyl fluoride;

xxviii. dansyl glycine;

xxix. alanine tetrazole;

xxx. benzoic tetrazole;

xxxi. tetrazole;

xxxii. riboflavin 5'-pyrophosphate;

xxxiii. D, L-propargylglycine;

xxxiv. L-C-propargylglycine;

xxxv. N-acetyl-DL-proparglyglycine;

xxxvi. (±)-sodium 3-hydroxybutyrate;

xxxvii. trigonelline hydrochloride;

xxxviii. N-methylnicotinate;

xxxix. methyl 6-methylnicotinate;

xl. ethyl 2-methylnicotinate;

xli. kojic acid;

xlii. 6-(pyrrolidinomethyl)-kojic acid hydrochloride, 6-(morpholinomethyl)-kojic acid, 6-(diethylaminomethyl)-kojic acid hydrochloride;

xliii. O-(2,4-dinitrophenyl)hydroxylamine;

xliv. 2,4-dinirophenyl glycine;

xlv. hydroxylamine hydrochloride;

xlvi. methyl-p-nitrobenzenesulfonate;

xlvii. aminoethylcysteine-ketimine;

xlviii. 1,4-thiazine derivatives;

xlix. 4-phenyl-1,4-sulfonazan;

l. phenothiazine;

li. 3,4-dihydro-2H-1,4-thiazine-3,5-dicarboxylic acid;

lii. nifurtimox;

liii. 3-(1-pyrrolidinylmethy)-4-(5,6-dichloro-1-indancarbonyl)-tetrahydro-1,4-thiazine hydrochloride;

liv. ketimine reduced forms;

lv. cystathionine;

lvi. cystathionine ketimine;

lxi. lanthionine ketimine;

lxii. thiomorpholine-2-carboxylic acid;

lix. thiomorpholine-2,6-dicarboxylic acid;

lx. TMDA (1,4-thiomorpholine-3,5-dicarboxylic acid);

lxi. 1-chloro-1-nitroethane;

lxii. anthranilate;

lxiii. ethyl 2-aminobenzoate;

lxiv. methyl 2-aminobenzoate;

lxv. picolinate;

lxvi. ethyl picolinate;

lxvii. L-leucine methyl ester hydrochloride;

lxviii. L-leucine;

lxix. flurodinitrobenzene;

lxx. dinitrochlorobenzene;

lxxi. 1,2-cyclohexanedione;

lxxii. allyglycine;

lxxiii. 2-amino-2,4-pentadienoate;

lxxiv. 2-hydroxy-2,4-pentadienoate;

lxxv. 2-amino-4-keto-2-pentenoate;

lxxvi. 2-hydroxybutyrate;

lxxvii. sodium 2-hydroxybutyrate;

lxxviii. N-chloro-D-leucine;

lxxix. N-acetyl-D-leucine;

lxxx. D-2-amino-4-methylpentanoic acid;

lxxxi. D, L-propargylglycine;

lxxxii. progesterone;

lxxxiii. FAD (flavin adenine dinucleotide);

lxxxiv. 6-OH-FAD;

lxxxv. phenylglyoxal;

lxxxvi. phenylglyoxal monohydrate;

lxxxvii. cyclothionine;

lxxxviii. alpha-alpha'-iminodipropionic;

lxxxix. meso-diaminosuccinic acid;

xc. thiosemicarbazide;

xci. thiourea;

xcii. methylthiouracil;

xciii. sulphathiazole;

xciv. sulfathiazole Salt;

xcv. thiocyanate;

xcvi. 3-methylbenzyl thiocyanate;

xcvii. methimazole;

xcviii. dicarboxylic hydroxyacids;

xcix. 1,3-acetonedicarboxylic acid;

c. D-tartaric acid;

ci. L-tartaric acid;

cii. D, L-tartaric acid;

ciii. potassium tartarate;

civ. D-malic acid;

cv. L-malic acid;

cvi. D, L-malic acid;

cvii. alpha-keto acids that are analogues of the amino acids alanine, leucine, phenylanaline, phenylglycine, tyrosine, serine, aspartate, and salts thereof;

cviii. pyruvic acid;

cix. sodium pyruvate;

cx. pyruvic acid methyl ester;

cxi. phenylpyruvic acid;

cxii. calcium phenylpyruvate;

cxiii. phenylpyruvic acid sodium salt;

cxiv. 4-hydroxyphenyl pyruvic acid;

cxv. sodium alpha-ketoisovaleric acid;

cxvi. benzoylformic acid);

cxvii. 4-methylthio-2-oxopentanoic acid;

cxviii. 4-methyl-2-oxopentanoic acid;

cxix. 4-methylthio-2-oxybutanoic acid;

cxx. 2-oxybutanoic acid;

cxxi. D, L-alpha-hydroxybutyric acid sodium salt;

cxxii. indole-3-pyruvic acid;

cxxiii. cysteamine;

cxxiv. pantetheine;

cxxv. S-adenosylmethionine;

cxxvi. ethyl bromopyruvate;

cxxvii. methyl bromopyruvate;

cxxviii. bromopyruvate; and

cxxix. 5-S-cysteinyldopamine.